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**Uganda
HIV/AIDS
Sero-Behavioural
Survey
2004-05**

**Preliminary
Report**

**Ministry of Health
Kampala, Uganda**

This report summarises the findings of the 2004-05 Uganda HIV/AIDS Sero-Behavioural Survey (UHSBS) carried out by the Ministry of Health. ORC Macro provided financial and technical assistance for the survey through the USAID-funded MEASURE DHS programme, which is designed to assist developing countries to collect data on fertility, family planning, maternal and child health, and HIV/AIDS. Financial and technical assistance was also provided by the U.S. Centers for Disease Control and Prevention (CDC). Financial support was provided by the Government of Uganda, the U.S. Agency for International Development (USAID), the President's Emergency Fund for AIDS Relief, and the Government of Japan through the Japan International Cooperation Agency (JICA). Additional support was provided by the Uganda Bureau of Statistics, the World Health Organization, the AIDS Integrated Model (AIM) project, UNAIDS, Makerere University, the Uganda AIDS Commission, and the Uganda Global Fund for AIDS, TB, and Malaria project. The opinions expressed in this report do not necessarily reflect the views of the donor organisations. It is also important to acknowledge the contribution of the office and field staff, district officials, communities, and survey respondents, without whom the survey would not have been possible.

Additional information about the survey may be obtained from the Ministry of Health (MOH), P.O. Box 7272, Kampala (Telephone: 256.41.340.874 or 256.41.259.669; Fax: 256.41.348.278; E-mail: opioalex@infocom.co.ug; jmusinguzi@infocom.co.ug; wkirungi@starcom.co.ug).

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**UGANDA
HIV/AIDS SERO-BEHAVIOURAL SURVEY
2004-05**

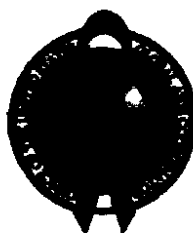
PRELIMINARY REPORT

**Ministry of Health
Kampala, Uganda**

**MEASURE DHS
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Entebbe, Uganda**

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1 INTRODUCTION

The 2004-05 Uganda HIV/AIDS Sero-Behavioural Survey (UHSBS) is the first nationally representative, population-based, HIV serological survey to be carried out in Uganda since 1988. The survey was designed with the objective of obtaining national and sub-national data on the prevalence of HIV infection and other sexually transmitted diseases as well as information about other programme indicators of knowledge, attitudes and sexual behaviour related to HIV/AIDS. Data collection took place from 14 August 2004 until late January 2005.

The UHSBS was implemented by the Ministry of Health. ORC Macro provided financial and technical assistance for the survey through the USAID-funded MEASURE DHS programme. Financial and technical assistance was also provided by the U.S. Centers for Disease Control and Prevention (CDC). Financial support was provided by the Government of Uganda, the U.S. Agency for International Development (USAID), the President's Emergency Fund for AIDS Relief, and the Government of Japan through the Japan International Cooperation Agency (JICA). Additional support was provided by the Uganda Bureau of Statistics, the World Health Organization, the AIDS Integrated Model (AIM) project, UNAIDS, Makerere University, the Uganda AIDS Commission, and the Uganda Global Fund for AIDS, TB, and Malaria project.

The survey obtained information on knowledge, attitudes, and behaviour regarding HIV/AIDS. The survey also collected information on the prevalence of HIV and other sexually transmitted infections and their social and demographic variations in the country. The overall goal of the survey was to provide programme managers and policymakers involved in HIV/AIDS programmes with strategic information needed to effectively plan, implement and evaluate future interventions, including resource mobilisation and allocation.

The information is also intended to assist policymakers and programme implementers to monitor and evaluate existing programmes and to design new strategies for combating the HIV/AIDS epidemic in Uganda. The survey data will in addition be used to make population projections and to calculate indicators developed by the UN General Assembly Special Session (UNGASS), USAID, the President's Emergency Fund, the UNAIDS Programme, the World Health Organisation (WHO), the Uganda Health Sector Strategic Plan, and the HIV/AIDS National Response.

The specific objectives of the 2004-05 UHSBS were:

- to obtain accurate estimates of the magnitude and variation in HIV prevalence in Uganda.
- to obtain accurate information on behavioral and care indicators related to HIV/AIDS and other sexually transmitted infections.
- to obtain accurate information on HIV/AIDS programme indicators.
- to provide information on HIV prevalence to calibrate and improve the sentinel surveillance system.
- to determine the magnitude and distribution of syphilis and herpes simplex 2 infection.
- to assess the magnitude and distribution of hepatitis B infection.
- to determine the feasibility of conducting a sero-behavioural survey with an HIV home-based VCT component.

This preliminary report presents the results of selected key indicators of the 2004-05 UHSBS, including preliminary estimates of HIV prevalence among adults. A comprehensive report of the findings of the survey will be published later in the year and will include results from the remaining biological tests. While considered provisional, the results presented here are not expected to differ significantly from those to be presented in the detailed report.

2 SURVEY IMPLEMENTATION

2.1 Sample Design

The sample for the 2004-05 UHSBS covered the population residing in households in the country. A representative probability sample of 10,425 households was selected for the UHSBS sample; an additional 12 households were found during field work for a total of 10,437. The sample was constructed to allow for separate estimates for key indicators for each of nine regions created for the survey, consisting of groupings of the 56 districts in Uganda. The regions were set as follows:

- 1 Central: Kalangala, Kiboga, Luwero, Masaka, Mpigi, Mubende, Nakasongola, Rakai, Sembabule, and Wakiso
- 2 Kampala
- 3 East Central: Bugiri, Iganga, Jinja, Kamuli, Kayunga, Mayuge, and Mukono
- 4 Eastern: Busia, Kapchorwa, Mbale, Pallisa, Sironko, and Tororo
- 5 Northeast: Kaberamaido, Katakwi, Kotido, Kumi, Moroto, Nakapiripirit, and Soroti
- 6 North Central: Apac, Gulu, Kitgum, Lira, and Pader
- 7 West Nile: Adjumani, Arua, Moyo, Nebbi, and Yumbe
- 8 Western: Bundibugyo, Hoima, Kabarole, Kamwenge, Kasese, Kibaale, Kyenjojo, and Masindi
- 9 Southwest: Bushenyi, Kabale, Kanungu, Kisoro, Mbarara, Ntungamo, and Rukungiri.

The sample was allocated equally across all nine regions, so as to allow a sufficient size in each so as to produce reliable results. Since the sample was not allocated in proportion to the size of each region, the UHSBS sample is not self-weighting at the national level. Consequently, weighting factors have been applied to the data to produce nationally representative results.

The survey utilised a two-stage sample design. The first stage involved selecting sample points or clusters from a list of enumeration areas (EAs) covered in the 2002 Population Census. A total of 417 clusters comprised of 74 urban and 343 rural points were selected. The second stage of selection involved the systematic sampling of households from the census list of households in each cluster.

All women and men aged 15-59 years who were either permanent residents of the households in the sample or visitors present in the household on the night before the survey were eligible to be interviewed in the survey. Unlike most studies in which the age category reflects the reproductive age group 15-49, the upper age cutoff in this survey was extended to 59 years so as to include the segment of the population that remains sexually active up to that age. All women and men who were interviewed were asked to voluntarily give a blood sample for testing. In addition, blood samples were drawn from children under age five after obtaining consent from their parents or caretaker. Children age 5-14 were not enrolled in the survey because other studies have shown a very low HIV prevalence in this age group.

2.2 Questionnaires

Two questionnaires were used in the survey, the Household Questionnaire and an Individual Questionnaire for women and men aged 15-59. The contents of these questionnaires were based on the model AIDS Indicator Survey questionnaires developed by the MEASURE DHS programme.

In consultation with a spectrum of government agencies and local and international organisations, the MOH and DHS modified the model questionnaires to reflect issues in HIV/AIDS relevant to Uganda. These questionnaires were then translated from English into six local languages—Ateso-Karamajong, Luganda, Lugbara, Luo, Runyankole-Rukiga, and Runyoro-Rutoro. The questionnaires were further refined after the pretest and training of the field staff.

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Some basic information was collected on the characteristics of each person listed, including age, sex, education, relationship to the head of the household, and orphanhood among children under age 18 years. The main purpose of the Household Questionnaire was to identify women and men who were eligible for the individual interview. The household questionnaire also collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership of mosquito nets. Information was also collected on whether the household had received specific types of care and support in the preceding 12 months for any chronically ill adults, any household members who died, and any orphans and vulnerable children. In addition, the Household Questionnaire was used to record respondents' consent to volunteer to give blood samples. The HIV testing procedures are described in detail in the next section.

The Individual Questionnaire was used to collect information from all women and men aged 15-59 years and covered the following topics:

- Background characteristics (education, media exposure, occupation, religion, etc.)
- Reproduction
- Marriage and sexual activity
- Husband's background (for women)
- Knowledge and attitudes towards HIV/AIDS
- Knowledge and prevalence of other sexually transmitted infections (STIs)

All aspects of the UHSBS data collection were pre-tested in June 2004. For this, five teams were formed, each with 1 supervisor, 2 female interviewers, 2 male interviewers and 2 laboratory technicians. Team members were trained for ten days and then proceeded to conduct the survey in the various districts in which their native language was spoken. In total, 300 individual interviews were completed in the pretest. The lessons learnt from the pretest were used to finalise the survey instruments and logistical arrangements for the survey.

2.3 Blood Sample Collection

All women and men aged 15-59 who were interviewed were asked to voluntarily provide a blood sample for subsequent testing for HIV, syphilis, herpes simplex virus 2, and hepatitis B. Blood samples were also requested for all children under five for testing for HIV and hepatitis B. The protocol for the blood specimen collection and analysis was developed jointly by all parties to the survey. It was reviewed and approved by ORC Macro's Institutional Review Board and the Science and Ethics Committee of the Uganda Virus Research Institute and was also cleared by the Ethics Committee of the Uganda National Council of Science and Technology and the Centers for Disease Control and Prevention (CDC) in Atlanta. The protocol allows for the merging of the test results to the socio-demographic and behavioural data collected in the individual questionnaires, provided that the information that could potentially identify an individual is destroyed before the linking is effected. This requires that cluster and household codes be deleted from the data file and that the back page of the Household Questionnaire that contains the bar code labels be destroyed prior to merging the test results with the individual data file. Careful planning for this step will take some time. Consequently, for this preliminary report, a small file of data containing only the age, sex, residence, province, and education of individuals along with their bar code labels was extracted from the individual data file for merging with the test results. The main report will contain the analysis of the fully linked dataset.

For the purposes of blood sample collection, two laboratory technicians were included in each of the 18 field teams. The laboratory technicians were recruited from Ministry of Health and non-governmental health facilities. To obtain informed consent for blood sampling, the laboratory technician explained the

procedure, the confidentiality of the data, the fact that respondents could obtain their syphilis results the following day if they wanted, the fact that those testing positive for syphilis could be treated, and the fact that the other test results could not be linked or made available to the respondent.

After obtaining consent, the laboratory technician drew a venous blood sample in a 4.5 ml EDTA Vacutainer tube. If respondents refused the venous blood draw, they were given an option to provide a dried blood spot sample on a filter paper card from a finger prick using a single-use, spring-loaded, sterile lancet. For children under five, consent was sought from the parent or guardian to take a dried blood spot sample. Blood tubes and filter paper dried blood spot samples were labeled with a bar-coded identification label which was also pasted on the Household Questionnaire on the line number for that respondent and on various other laboratory forms.

2.4 Laboratory Testing

Before starting work in a given area, each team made arrangements to establish a temporary field laboratory, usually setting up their mobile equipment in a spare room in a laboratory attached to a hospital or health centre. Each team carried cold boxes, centrifuges, a generator, a liquid nitrogen tank, and routine lab supplies such as pipettes, gloves, tubes, etc. In the temporary field laboratory, the laboratory technicians first made a back-up dried blood spot from the venous blood samples. They then centrifuged the blood and transferred the plasma to microvials, labeled with the same bar code identification. A small aliquot was removed and tested for syphilis using the rapid plasma reagin (RPR) card test. Results were recorded on a pre-printed laboratory results form that was given on the morning of the next day to the interviewer on the team who was designated to return the syphilis results to respondents. Packed blood cells remaining in the EDTA Vacutainer tubes were transferred to microvials labeled with the bar code for long-term storage. Microvials containing plasma and packed blood cells were stored in liquid nitrogen tanks and their location within the tank recorded on a pre-printed specimen inventory form. All dried blood spots were air-dried overnight in plastic boxes and stored at ambient temperature in lots of 20 separated by glassine paper in ziplock bags containing desiccants. Specimens were periodically collected from the field and taken to the Uganda Virus Research Institute (UVRI). Re-charged liquid nitrogen tanks and re-supplies were also provided to the teams.

Syphilis results were provided to respondents who provided a venous blood sample and who indicated that they would like to get their results. At least one of the interviewers on each team was a nurse who was designated to provide the results at the respondent's home the following day. Respondents testing positive for syphilis were treated with a single injection of benzathine penicillin. Anyone who indicated being allergic to penicillin was treated with erythromycin tablets in line with national treatment guidelines.

Specimens received at UVRI were checked against the specimen shipping forms and were then registered electronically using a bar-code reader. Each specimen was assigned a unique laboratory number during the registration process and laboratory testing and storage in the repository were carried out against that number. Specimens were subjected to the following tests:

HIV: Plasma specimens from the venous blood draw were tested with a two HIV EIA parallel testing algorithm—Murex 1.2.0 (Abbott) and Vironostica Uniform II Plus O (Biomérieux)—in accordance with WHO guidelines, with repeat testing for specimens with 'grey zone' or discordant results on the two assays; Western blot was carried out to resolve specimens with repeatedly discordant results using WHO interpretative criteria. For quality control, all positive specimens and 5 percent of negative specimens were re-tested using the same testing algorithm; specimens with discordant results were resolved by repeating the testing algorithm.

Dried blood spot specimens from children and from adults who declined the venous blood sample were tested for HIV by eluting serum from 6 mm discs punched from the blood spots. They were tested with a two HIV EIA parallel testing algorithm—Murex 1.2.0 (Abbott) and Vironostika Uniform II Plus O (Biomérieux). Specimens from adults with unambiguously positive or negative results on both assays were reported without further testing, while all others were tested by Western blot using WHO interpretative criteria. Specimens from children less than 18 months of age with a positive or ambiguous result will be further tested for HIV DNA using a polymerase chain reaction (PCR) test (Roche HIV DNA 1.5 kit).

Syphilis: All plasma specimens, regardless of the field result, were screened with the RPR test at a dilution of 1:8; reactive specimens were titrated at doubling dilutions and reported as positive after review by a second reader. In addition, all specimens positive on RPR and 10 percent of negative specimens were tested with the (TPHA) test. For quality control, all positive specimens and 5 percent of negative specimens were tested using this algorithm. Specimens with discordant results were resolved by repeat testing on the same assays or were reported as indeterminate.

Herpes simplex-2: Testing for herpes has not yet started; however, specimens will be tested on an HSV-2 EIA (Kalon Biological HSV Type 2 IgG indirect ELISA). Specimens with results in the defined 'grey zone' will be tested again and since there is no reliable confirmatory assay, those that remain 'grey zone' will be reported as 'indeterminate'. For quality control, a proportion of the positive specimens and 10 percent of negative specimens will be re-tested, and specimens with discordant results will be reported as indeterminate.

Hepatitis B: Testing on Hepatitis B has not yet been performed, however plans call for screening specimens with HBsAg and anti-HBc EIAs; persons negative on both assays have not been exposed to HBV; persons positive on both assays are acutely or chronically infected with HBV while those negative for HBsAg and positive for anti-HBc would require further testing using anti-HBs to resolve their status.

2.5 Voucher System for Voluntary Counseling and Testing

Respondents who agreed to provide a venous blood sample were offered the opportunity to get the results of the syphilis test that was performed in the field laboratory. However, respondents were not offered the results of any of the other tests, including HIV.

In order to assist respondents who wanted to know their HIV status, survey respondents were given a voucher for a free voluntary counseling and testing (VCT) visit, as well as an educational pamphlet that summarised available services and benefits of testing. The vouchers could either be used at a nearby health facility or at an outreach point established by the UHSBS project. As part of the VCT voucher system, UHSBS project staff identified and visited health facilities that were located close to each of the sample points selected for the survey. If these facilities did not already offer VCT services, provision was made to provide it during the survey period. Facilities were also provided with rapid HIV test kits and other supplies and forms needed to provide VCT services. A VCT supervisor was appointed in each district and, within each of the identified facilities, two counselors and a laboratory person were enrolled to assist with the survey. These teams were responsible for making VCT services available at the facilities and, in cases in which the selected sample spot was located far from the facility, for providing outreach VCT services in locations close to the spot. At the end of the data collection phase, UHSBS staff compiled data from all the facilities on the number of vouchers that were utilised.

2.6 Training

The training of field staff for the UHSBS was held from 21 July–6 August 2004. A total of 140 candidates for supervisors and interviewers was trained at the Hotel Africana in Kampala, while 46

laboratory technicians were trained at Tal Cottages in Kampala. Trainers were senior staff from the UHSBS project, assisted by staff from the Uganda Bureau of Statistics, UVRI, Ministry of Health, Makerere University, and ORC Macro.

Because of their large number, trainees for team supervisors and interviewers were divided into three groups, each with two assigned trainers. Training consisted of an overview of the survey and its objectives, techniques of interviewing, field procedures, a detailed description of all sections of the household and individual questionnaires, mock interviews between pairs of trainees, and three tests. During the second week, trainees were divided into language groups to review the questionnaires in their local languages. That week was also taken up with three days of practice in three sites close to Kampala, interspersed with discussions of the experience. A few days before the end of training, project staff identified individuals to be appointed as regional and team supervisors; they were provided a half-day of special training.

The lab technicians were trained on blood draw procedures (for both venous and capillary blood), specimen processing in the field lab, storage and transport of specimens, syphilis testing, lab safety procedures, labeling of samples and consent administration. They visited the acute care division of Mulago Hospital for further practice on infants and children. The laboratory technicians joined the interviewer and supervisor trainees for two days of field practice during the last few days of training. In addition, the nurse-interviewers were trained on how to administer syphilis treatment.

An average of two training sessions were held in each of the nine designated regions for the counselors and lab persons on the VCT teams. Training consisted of a general introduction to the survey, understanding the survey protocols, and how to use rapid HIV kits.

2.7 Community Mobilisation and Fieldwork

Prior to the start of fieldwork, UHSBS staff arranged for numerous activities designed to promote awareness of the survey and encourage participation. Posters and brochures were printed and distributed to local officials in the areas that fell within the sample. TV and radio spots and talk shows were conducted to raise awareness of the general public to the survey. Teams from the survey office visited local officials immediately before the commencement of the survey to alert them to the survey. Advocacy and mobilization activities continued throughout the survey period to ensure smooth and successful implementation. The purpose of the survey, its design, implementation, utilization of survey data and the need for community participation were discussed as well as issues of confidentiality and reasons for anonymity of HIV testing. Finally, when the survey was launched, UHSBS staff arranged for a press briefing and 'flagging off' of the teams by the Minister of Health and other senior MOH officials. The ceremony was covered by the news media, which also helped to advocate for the survey.

Eighteen teams carried out data collection for the survey. Each team consisted of one supervisor, two female interviewers, two male interviewers, two laboratory technicians and one driver. UHSBS staff coordinated and supervised fieldwork activities, assisted by occasional visits by staff from ORC Macro. Data collection took place over a five-month period, from 13 August 2004 to the end of January 2005.

2.8 Data Processing

The processing of the UHSBS questionnaires began shortly after the fieldwork commenced. Completed questionnaires were returned periodically from the field to the UHSBS project office in Kampala, where they were entered and edited by data processing personnel specially trained for this task. Data were entered using Macro's CPro computer programme. All data were entered twice (100 percent verification). The concurrent processing of the data was a distinct advantage for data quality, since UHSBS staff were able to advise field teams of errors detected during data entry. The data entry and editing phase of the survey was completed in early March 2005.

Laboratory testing at UVRI also began shortly after the data collection. Priority was given to the HIV testing, which is covered in this report. Testing of syphilis, herpes and hepatitis, as well as PCR testing for children under 18 months of age is not yet completed and will be covered in the more detailed final report.

3 RESULTS FROM THE SURVEY INTERVIEWS

3.1 Response Rates

Table 1 shows response rates for the UHSBS. A total of 10,437 households were selected in the sample, of which 9,842 were found to be occupied at the time of the fieldwork. The shortfall is largely due to structures that were vacant or destroyed. Of existing households, 9,529 were interviewed, yielding a household response rate of 97 percent.

In the households interviewed in the survey, a total of 10,605 eligible women aged 15-49 were identified, of whom 9,973 were interviewed, yielding a response rate of 94 percent. With regard to the male survey results, 9,023 eligible men aged 15-49 were identified, of whom 8,009 were successfully interviewed, yielding a response rate of 89 percent. The response rate for both sexes combined is 92 percent. Response rates are lower in urban than rural areas, especially for men.

The principal reason for non-response among both eligible men and women was the failure to find individuals at home despite repeated visits to the household. The lower response rate for men reflects the more frequent and longer absence of men from the households.

3.2 Characteristics of Respondents

Although women and men aged 15-59 were interviewed individually in the survey, the tables in this report focus on age group 15-49, with only occasional reference to 15-59. The reason for this is that virtually all the HIV indicators agreed upon by Ugandan and international organisations are based on age group 15-49. Another reason is that previous datasets only included respondents in this age group.

The distribution of women and men aged 15-49 years by background characteristics is shown in Table 2. The proportions of both women and men decline with increasing age reflecting the comparatively young age structure of the Ugandan population. Sixty-four percent of women are married or living in an informal union with a man, compared to only 53 percent of men. Because men marry later in life than women, over one-third of the surveyed men (39 percent) have never married, compared to only one-fifth (22 percent) of the women. On the other hand, women are four times as likely as men to be widowed (under 6 percent versus just over 1 percent) and more likely to be divorced or separated (8 versus 7 percent).

Table 1
Results of household and individual interviews, Uganda 2004-2005

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	1,853	8,584	10,437
Households occupied	1,742	8,100	9,842
Households interviewed	1,666	7,863	9,529
Household response rate	95.6	97.1	96.8
Interviews with women 15-49			
Number of eligible women	2,025	8,580	10,605
Number of eligible women interviewed	1,827	8,146	9,973
Eligible woman response rate	90.2	94.9	94.0
Interviews with men 15-49			
Number of eligible men	1,761	7,262	9,023
Number of eligible men interviewed	1,387	6,622	8,009
Eligible man response rate	78.8	91.2	88.8

Table 2
Background characteristics of respondents age 15-49, Uganda 2004-2005

Background Characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	22.0	2,186	2,176	25.8	2,070	2,042
20-24	19.4	1,933	1,945	15.8	1,262	1,261
25-29	17.7	1,764	1,809	15.2	1,220	1,228
30-34	14.7	1,457	1,469	15.0	1,200	1,209
35-39	10.9	1,085	1,074	11.4	916	917
40-44	8.7	870	864	9.8	788	800
45-49	6.5	647	636	6.9	554	552
Marital status¹						
Never married	22.3	2,220	2,238	39.2	3,140	3,103
Married/living together	64.0	6,358	6,406	52.9	4,237	4,300
Widowed	5.8	581	565	1.3	100	97
Divorced/separated	7.9	781	764	6.6	532	509
Residence						
Urban	15.2	1,508	1,827	15.0	1,200	1,387
Rural	84.8	8,433	8,146	85.0	6,889	6,622
Region						
Central	16.7	1,656	942	18.1	1,451	844
Kampala	6.7	668	1,099	6.8	547	811
East Central	15.6	1,555	1,169	14.3	1,146	877
Eastern	8.6	857	915	9.6	770	822
Northeast	8.3	829	1,246	7.6	610	913
North Central	9.8	970	1,034	9.9	795	868
West Nile	9.6	958	1,451	9.2	735	1,148
Western	11.5	1,140	1,058	11.8	945	906
Southwest	13.2	1,309	1,059	12.6	1,012	820
Education						
No education	22.7	2,255	2,494	8.3	668	713
Primary incomplete	46.2	4,596	4,490	46.5	3,723	3,632
Primary complete	11.2	1,115	1,042	14.1	1,133	1,147
Secondary +	19.9	1,975	1,947	31.0	2,486	2,517
Religion						
Catholic	41.9	4,161	4,334	41.9	3,359	3,505
Anglican/Protestant	34.1	3,388	3,235	36.7	2,939	2,821
Seventh Day Adventist	1.2	117	101	1.1	85	73
Pentecostal	6.0	600	585	3.9	315	313
Other Christian	1.3	130	142	1.8	142	127
Muslim	13.9	1,382	1,406	13.2	1,055	1,048
Other, traditional, none	1.7	164	170	1.3	114	122
Pregnancy status						
Pregnant	11.5	1,147	1,161	0.0	0	0
Not pregnant	87.1	8,660	8,682	0.0	0	0
Unsure	1.3	134	130	0.0	0	0
Total	100.0	9,941	9,973	100.0	8,010	8,009

Note: For a description of the weighting procedures, see section 2.1.

¹ The category 'widowed' consists of those who are not currently married and who had a previous spouse who died. It may be slightly overestimated to the extent that respondents who are currently divorced but previously widowed are considered widowed instead of divorced.

The vast majority (85 percent) of the women and men live in rural areas. Central and East Central regions are the most heavily populated, accounting for roughly one-third of the respondents. Most of the respondents (over three-quarters) have had at least some formal education, with 23 percent of women and 8 percent of men aged 15-49 having never attended school. However, 46 percent of both women and men have only attended some primary school, without completing it. Women are considerably disadvantaged in education compared to men. For example, 45 percent of men have completed primary or more, compared to only 31 percent of women. Just over four in 10 respondents are Catholic, while just over one-third are Protestant and 13-14 percent are Muslim. Twelve percent of women were pregnant at the time of the survey.

3.3 Male Circumcision

Circumcision is practiced in many societies in Uganda. Table 3 shows that one-quarter of Ugandan men age 15-49 are circumcised.

There is almost no difference in circumcision by age group, implying that there has been little change in the prevalence of the practice over time. The slightly lower prevalence among men age 15-19 could be due to a decline in the practice, but it might also be due to the fact that some of the youngest men have not yet been circumcised.

Male circumcision is more common among urban than rural men. It is also much more common among men in Eastern region (55 percent), as well as in Kampala (38 percent), and East Central region (35 percent). Less than 10 percent of men in North Central, Northeast and Southwest regions are circumcised.

Male circumcision is higher among Muslim men, 97 percent of whom have been circumcised. Prevalence is lowest among Catholic men (10 percent).

3.4 Knowledge of HIV/AIDS Transmission

The 2004-05 UHSBS included a series of questions that inquired about respondents' knowledge of AIDS and awareness of modes of transmission of HIV. In addition, respondents were asked if they knew of behaviours that can prevent the spread of HIV.

Table 4 shows that general awareness of AIDS is nearly universal among women and men in the reproductive ages. Ninety-nine percent of women and men aged 15-49 have heard of AIDS, almost identical to the figures from the 2000-01 UDHS.

Table 3
Male circumcision, Uganda 2004-05

Background characteristic	Percent circumcised	Number of men
Age		
15-19	21.8	2,070
20-24	27.1	1,262
25-29	22.5	1,220
30-34	26.6	1,200
35-39	26.0	916
40-44	28.3	788
45-49	25.6	554
Residence		
Urban	36.0	1,200
Rural	22.9	6,809
Region		
Central	23.6	1,451
Kampala	37.9	547
East Central	34.7	1,146
Eastern	54.7	770
Northeast	4.9	610
North Central	2.4	795
West Nile	29.1	735
Western	29.9	945
Southwest	7.6	1,012
Religion		
Catholic	9.5	3,359
Anglican/Protestant	17.2	2,939
SDA	25.8	85
Pentecostal	19.8	315
Other Christian	23.4	142
Muslim	97.3	1,055
None	25.4	51
Total 15-49	24.8	8,010
Total 15-59	24.9	8,830

Note: Total includes some men of religions with too few cases to show separately.

Knowledge of HIV prevention methods is also widespread. Nine in 10 adults (88 percent of women and 90 percent of men) know that having only one uninfected, faithful partner can reduce the chances of getting AIDS. Two-thirds of women and three-quarters of men say that using condoms every time they have sex can reduce the chance of getting AIDS. Knowledge of both these means of avoiding HIV transmission is also high, with 63 percent of women and 72 percent of men citing both being faithful and using condoms as ways of reducing the risk of getting HIV. As expected, the proportions of both women and men who know that sexual abstinence reduces the chances of getting the AIDS virus is high—87 percent among women and 85 percent among men. There are only slight differences by sex, except that men are better informed than women about condom use.

In addition to knowing about effective ways to avoid contracting HIV, it is also useful to be able to identify incorrect beliefs about AIDS, in order to eliminate misconceptions. Common misconceptions about AIDS include the idea that HIV-infected people always appear ill and the belief that the virus can be transmitted through mosquito bites or other insect bites, by sharing food with someone who is infected, or by witchcraft or other supernatural means. Respondents were asked about these four misconceptions.

Data in Table 5 indicate that the vast majority of Ugandan adults know that people infected with HIV do not necessarily show signs of infection. Seventy-four percent of women and 84 percent of men aged 15-49 know that a healthy-looking person can be infected with HIV. Fewer respondents understand that the AIDS virus cannot be transmitted by mosquito bites; only 56 percent of women and 58 percent of men know that AIDS cannot be transmitted by mosquito bites. A much higher proportion—over three-quarters—are aware that sharing food with HIV-infected people is not a means of transmitting the virus.

Table 5

Rejection of misconceptions about AIDS, Uganda 2004-05

Percentage of women and men 15-49 who know:	Women	Men
A healthy-looking person can have the AIDS virus	74.0	84.4
People cannot get AIDS virus from mosquito bites	56.3	58.1
People cannot get AIDS virus by sharing food with a person who has AIDS	76.6	80.2
A healthy-looking person can have AIDS <u>and</u> mosquito bites and sharing food cannot transmit AIDS	38.6	46.2
People cannot get AIDS virus from witchcraft or other supernatural means	84.6	88.1
Comprehensive knowledge ¹	28.2	35.8
Number of respondents	9,941	8,010

¹ Knows being faithful and using condoms are ways to reduce risk, does not believe people can get AIDS from mosquito bites or by sharing food, and knows a healthy-looking person can be infected.

Looking at all three beliefs together, 39 percent of women and 46 percent of men have correct knowledge on all these issues. Respondents were also asked if they thought that people could get the AIDS virus because of witchcraft or other supernatural means. The vast majority of Ugandans reject this idea, with 85 percent of women and 88 percent of men saying that witchcraft is not a means of transmission.

Comprehensive knowledge refers to those who know two means of reducing HIV risk (being faithful to one uninfected partner and consistent use of condoms) and who reject the two most common misconceptions about transmission (sharing food and mosquito bites) and who know that a healthy-looking person can have HIV. Twenty-eight percent of women and 36 percent of men aged 15-49 have comprehensive knowledge about HIV.

There has been little change in these indicators since 2000-01. The proportion of respondents who know that a healthy-looking person can be infected with HIV has declined very slightly, from 77 percent to 74 percent among women age 15-49 and from 88 percent to 84 percent among men 15-49.

3.5 Attitudes Relating to HIV/AIDS

Stigma and discrimination against people infected with HIV is one of the key challenges in the prevention and control of the epidemic. People living with HIV/AIDS face discrimination and sometimes neglect due to hostile attitudes. More importantly, stigma leads to secrecy and denial that hinders people from seeking counseling and testing for HIV, which is one of the crucial first steps in fighting the epidemic.

In the UHSBS, respondents who had heard of AIDS were asked several questions related to their attitudes towards those infected by HIV/AIDS. They were asked about their willingness to care for a sick relative with AIDS in their own households. Another question assessed willingness to buy sugar or fresh vegetables from an infected shopkeeper/vendor if they knew that he/she had the AIDS virus.

Survey results indicate that almost 9 in 10 Ugandans would be willing to care for a relative who is sick with AIDS in their own household (Table 6); far fewer women (59 percent) and men (72 percent) say they would buy vegetables or sugar from a shopkeeper if they knew he or she is HIV positive.

Table 6

Accepting attitudes towards people who are HIV-infected, Uganda 2004-05

Percentage of respondents age 15-49 who have heard of AIDS and who:	Women	Men
Would be willing to care for a relative sick with AIDS in own household	86.3	87.2
Would buy sugar or fresh vegetables from a shopkeeper or vendor who had the AIDS virus	59.4	71.8
Believes a female teacher who has the AIDS virus but is not sick should be allowed to continue teaching	61.2	65.1
If a family member got infected with AIDS virus, would not necessarily want it to remain a secret	45.4	53.4
Expresses positive attitudes on all four indicators	18.7	28.2
Number of respondents who have heard of AIDS	9,801	7,939

About 6 in 10 Ugandans believe that a female teacher who has the AIDS virus but is not sick should be allowed to continue teaching in the school. Just under half of women and just over half of men say that if a member of their family got infected with the virus that causes AIDS, they would not necessarily want it to remain a secret.

A composite indicator combines all four of these attitudes. As shown in the last row in Table 6, only 19 percent of women and 28 percent of men express positive attitudes on all four components of the indicator. It is also interesting to note that for all indicators, women are less likely to express accepting attitudes towards people with HIV/AIDS than men.

3.6 Sexual Behaviour

Age at first sex

By far the major means of HIV transmission in Uganda is through sexual intercourse. One way to reduce the spread of HIV infection is by encouraging young people to delay initiating sexual relations. Table 7 shows the age at which survey respondents reported they first had sex.

Table 7

Age at first sexual intercourse, Uganda 2004-05

Current age	Percentage who had first sexual intercourse by exact age:					Percentage who never had intercourse	Number of individuals	Median age at first intercourse
	15	18	20	22	25			
WOMEN								
15-19	12.2	na	na	na	na	54.4	2,186	a
20-24	17.0	63.6	87.0	na	na	6.5	1,933	17.1
25-29	18.7	67.5	87.4	95.2	98.0	1.1	1,764	16.7
30-34	21.1	68.6	89.3	95.1	98.4	0.3	1,457	16.6
35-39	22.5	65.8	86.6	93.9	97.8	0.1	1,085	16.7
40-44	20.5	65.2	86.8	94.9	97.1	0.0	870	16.7
45-49	22.0	66.4	86.8	93.5	97.2	0.2	647	16.6
20-49	19.7	66.1	87.4	na	na	2.0	7,755	16.8
MEN								
15-19	16.3	na	na	na	na	57.8	2,070	a
20-24	10.8	45.0	71.6	na	na	14.9	1,262	18.3
25-29	11.5	44.9	69.8	84.7	94.4	2.8	1,220	18.3
30-34	11.9	45.6	70.7	85.3	93.9	0.7	1,200	18.3
35-39	10.6	42.0	67.6	83.5	90.9	0.3	916	18.5
40-44	11.5	41.7	67.4	85.2	92.1	0.6	788	18.5
45-49	9.4	40.1	68.5	86.3	93.0	0.7	554	18.5
20-49	11.1	43.8	69.6	na	na	4.1	5,940	18.4

na = Not applicable

* Omitted because less than 50 percent of respondents had had sex before the start of the age group.

The data show that over half of youth age 15-19 report that they have never had sexual intercourse. The proportion of women age 15-19 who have never had sex shows a steady increase over time, from 38 percent in 1995 to 48 percent in 2000-01 and to 54 percent in 2004-05. The corresponding proportion of men aged 15-19 who have not had sex varies from 52 percent in 1995 to 61 percent in 2000-01 to 58 percent in 2004-05. More detailed analysis of age at first sex will be undertaken in the final report.

Number of sexual partners

Since the most important mechanism of HIV transmission in Uganda is through unprotected sexual intercourse with an infected partner, women and men interviewed in the 2004-05 UHSBS were asked questions about when they most recently had sex, the number of partners with whom they had had sex in the 12 months preceding the survey, the type of relationship they had with these partners, and the number of sexual partners in their whole life.

The data show that 74 percent of women and 70 percent of men aged 15-49 report having had sex in the 12 months prior to the survey (Table 8). As expected, younger respondents of both sexes and women in their 40s are less likely than those in other age groups to have had sex in the previous year.

Among those who were sexually active in the 12 months preceding the survey, only 4 percent of women reported having had more than one sexual partner, compared with 29 percent of men. Sexually active young women aged 15-19 are more likely to report having multiple partners in the previous year, while there is no consistent pattern in multiple partnerships among men by age group.

As for the mean number of lifetime sexual partners, women reported a mean of 2.2, compared to 6.7 for men. As might be expected, the mean number of partners increases with age.

Table 8
Multiple sex partnerships among women and men, Uganda 2004-05

Age	Among all respondents 15-49		Among those who had sex in the past 12 months		Among those who ever had sex	
	Percentage who had sex in the past 12 months	Number of respondents	Percentage who had 2+ partners in the past 12 months	Number of respondents who had sex in the past 12 months	Mean number of lifetime sexual partners	Number of respondents who ever had sex
WOMEN						
15-19	37.3	2,186	7.6	816	1.7	996
20-24	84.8	1,933	3.8	1,639	1.9	1,807
25-29	91.2	1,764	3.2	1,609	2.2	1,745
30-39	86.9	2,542	3.1	2,208	2.4	2,536
40-49	72.8	1,516	3.3	1,105	2.7	1,515
Total	74.2	9,941	3.8	7,376	2.2	8,599
MEN						
15-19	25.5	2,070	21.3	528	2.8	873
20-24	66.5	1,262	32.6	840	4.6	1,073
25-29	89.3	1,220	29.2	1,089	5.5	1,186
30-39	93.5	2,116	31.6	1,980	7.5	2,105
40-49	88.8	1,342	26.9	1,192	10.6	1,333
Total	70.3	8,010	29.3	5,628	6.7	6,571

Higher risk sex and condom use

Condom use is an important tool in the fight to curtail the spread of HIV/AIDS. Although truly effective protection would require condom use at every sexual encounter, the most important sexual encounters to cover are those considered to be 'higher risk'. In the context of this survey, higher risk sex is defined as sex with a non-marital, non-cohabiting partner in the 12 months preceding the survey. Table 9 shows for women and men who were sexually active in the 12 months preceding the survey, the proportion who engaged in higher risk sex and among those, the proportion who used a condom during sex with such partners.

The results show that, among respondents age 15-49 who were sexually active in the preceding 12 months, 15 percent of women and 37 percent of men engaged in sex with a non-marital, non-cohabiting partner. Of them, 47 percent of women and 53 percent of men reported using condoms at the most recent high-risk sex.

By the definition used here, all premarital sex is higher risk sex; consequently, the prevalence of higher risk sex is higher among the youngest respondents and among those who have never married or who used to be married. Among women, condom use at last higher risk sex is also highest among younger women, while among men, it is highest among those in their 20s. Urban women and men are more likely than rural respondents to engage in higher risk sex and also more likely to use condoms when having higher risk sex. There is a tendency for the prevalence of higher risk sexual behaviour to increase with education; however, the likelihood of having used a condom during the most recent higher risk sexual encounter also increases steadily with education level for both sexes.

Table 9

Higher risk sex and condom use at last higher risk sex in the 12 months preceding the survey, Uganda 2004-05

Background characteristic	Women				Men			
	Among those who had sex in the past 12 months		Among those who had higher risk sex in the past 12 months		Among those who had sex in the past 12 months		Among those who had higher risk sex in the past 12 months	
	Percentage engaging in higher risk sex in the past 12 months	Number of women who had sex in the past 12 months	Percentage who used condom at last higher risk sex	Number of women who had higher risk sex in past 12 months	Percentage engaging in higher risk sex in the past 12 months	Number of men who had sex in the past 12 months	Percentage who used condom at last higher risk sex	Number of men who had higher risk sex in past 12 months
Age								
15-19	45.4	816	55.6	371	92.3	528	50.5	487
20-24	16.2	1,639	49.1	266	63.0	840	59.4	529
25-29	10.2	1,609	51.7	164	34.7	1,089	59.1	378
30-39	10.2	2,208	32.6	226	24.2	1,980	52.2	478
40-49	9.3	1,105	31.5	102	16.0	1,192	35.4	190
Marital status								
Never married	93.2	586	55.4	546	98.3	1,025	56.0	1,008
Currently married	3.0	6,119	48.0	183	18.3	4,168	52.4	761
Formerly married	59.5	671	34.3	399	67.4	435	46.8	293
Residence								
Urban	29.0	1,024	64.7	297	52.6	806	73.7	424
Rural	13.1	6,353	40.3	832	34.0	4,822	48.1	1,638
Education								
No education	6.2	1,851	26.6	115	19.3	551	36.4	107
Primary incomplete	13.6	3,474	36.7	473	35.8	2,605	44.4	932
Primary complete	17.1	807	42.8	138	31.3	864	47.7	270
Secondary +	32.4	1,244	65.6	403	46.9	1,608	68.9	753
Total 15-49	15.3	7,376	46.7	1,128	36.6	5,628	53.4	2,862
Total 15-59	14.9	7,748	46.1	1,151	34.0	6,330	52.1	2,153

3.7 Family Planning

Information about use of contraceptive methods was collected from female respondents aged 15-49 by asking them if they were currently doing something or using any method to delay or avoid getting pregnant. Table 10 shows the level and key differentials in the current use of contraception by method as reported by currently married women. Contraceptive methods are grouped into two types in the table, namely modern and traditional methods. Modern methods include female sterilisation, pill, IUD, injectables, implants, male condom, and lactational amenorrhoea (LAM). Traditional methods include periodic abstinence (rhythm method), withdrawal, and other methods.

Slightly less than one in five currently married women (20 percent) are currently using some method of contraception. Modern methods of contraception are more commonly used (19 percent) than are traditional methods (1 percent). Of the modern methods, injectables are by far the most widely used (used by 10 percent of currently married women), followed by the pill (3 percent) and lactational amenorrhoea (3 percent).

Table 10

Current use of contraception among currently married women aged 15-49, Uganda 2004-2005

Background characteristic	Modern method									Traditional method					Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	LAM ¹	Any trad'l method	Periodic abstinence	Withdrawal	Other	Not currently using		
Age																
15-19	12.4	12.1	0.0	2.5	0.0	5.2	0.0	0.9	3.5	0.3	0.2	0.0	0.2	87.6	100.0	432
20-24	19.3	18.8	0.1	3.4	0.0	10.4	0.1	1.0	3.7	0.5	0.2	0.1	0.2	80.7	100.0	1,367
25-29	20.1	19.5	0.8	3.9	0.0	10.2	0.5	1.0	3.0	0.6	0.3	0.2	0.1	79.9	100.0	1,448
30-34	22.6	21.5	1.2	3.1	0.1	12.2	0.4	1.1	3.3	1.1	0.4	0.3	0.4	77.4	100.0	1,159
35-39	21.7	19.9	2.8	2.8	0.4	10.0	0.8	0.9	2.2	1.8	0.7	0.4	0.7	78.3	100.0	840
40-44	20.8	18.7	5.0	1.7	0.9	8.3	0.1	1.2	1.3	2.1	0.3	0.6	1.2	79.2	100.0	671
45-49	14.4	12.8	5.2	1.0	0.3	5.7	0.0	0.4	0.0	1.6	0.4	0.8	0.4	85.6	100.0	441
Residence																
Urban	41.3	39.7	1.7	10.5	1.1	19.8	1.1	3.5	1.9	1.7	0.8	0.5	0.4	58.7	100.0	732
Rural	16.9	16.0	1.7	2.0	0.1	8.4	0.2	0.6	2.9	0.9	0.3	0.3	0.4	83.1	100.0	5,626
Region																
Central	28.6	26.7	3.7	5.1	0.6	13.2	0.2	1.7	2.2	1.8	0.7	0.4	0.7	71.4	100.0	937
Kampala	42.9	41.7	2.2	13.8	1.8	16.3	1.2	4.9	1.4	1.2	0.8	0.0	0.4	57.1	100.0	299
East Central	21.5	20.3	1.2	3.7	0.0	11.6	0.4	1.3	2.0	1.2	0.1	0.5	0.5	78.5	100.0	990
Eastern	22.7	22.3	2.1	1.7	0.0	10.6	0.0	0.6	7.3	0.5	0.2	0.0	0.3	77.3	100.0	615
Northeast	15.6	15.3	0.6	0.7	0.1	4.0	0.1	0.2	9.6	0.3	0.1	0.0	0.2	84.4	100.0	622
North Central	12.0	11.8	1.6	0.8	0.0	7.2	0.3	0.8	0.8	0.3	0.3	0.0	0.0	88.0	100.0	705
West Nile	8.3	7.8	0.3	0.6	0.0	4.6	0.2	0.6	1.4	0.5	0.2	0.0	0.3	91.7	100.0	607
Western	16.4	15.8	0.8	3.9	0.0	9.7	0.3	0.5	0.6	0.6	0.0	0.3	0.3	83.6	100.0	780
Southwest	18.0	15.8	2.1	1.1	0.2	10.9	0.6	0.0	0.9	2.3	0.6	1.0	0.6	82.0	100.0	803
Education																
No education	9.9	9.1	1.2	0.7	0.1	4.4	0.1	0.3	2.3	0.8	0.2	0.3	0.3	90.1	100.0	1,772
Prim. incomple.	17.9	16.8	1.6	2.1	0.1	8.7	0.2	0.6	3.5	1.1	0.3	0.3	0.5	82.1	100.0	3,055
Prim. complete	28.6	27.8	2.1	5.2	0.0	16.3	0.3	1.6	2.3	0.8	0.4	0.3	0.1	71.4	100.0	691
Secondary +	39.9	38.4	2.9	9.1	0.9	19.6	1.2	3.1	1.4	1.4	0.8	0.2	0.4	60.1	100.0	840
Total	19.7	18.7	1.7	3.0	0.2	9.7	0.3	1.0	2.7	1.0	0.3	0.3	0.4	80.3	100.0	6,358

¹ Refers to lactational amenorrhoea method

The data show a slight decline in contraceptive use from the level of 23 percent found in the 2000-01 Uganda Demographic and Health Survey (Uganda Bureau of Statistics and ORC Macro, 2001). The decline is entirely due to a drop in use of traditional methods (from 4 to 1 percent); use of modern methods has remained more or less constant at 18-19 percent. There has been a substantial increase in use of injectables (from 6 to almost 10 percent of married women), with a slight decline in reported use of lactational amenorrhoea.

Contraceptive prevalence peaks among women in the 30-34 age-group and is lowest for women aged 15-19 and 45-49. A higher percentage of urban women (41 percent) use contraceptives, compared with their rural counterparts (17 percent). Married women in Kampala have the highest contraceptive prevalence rate (43 percent), followed by those in Central region (29 percent).

Contraceptive prevalence increases dramatically with increasing level of education. The proportion of married women using contraception rises from 1 in 10 women with no education to roughly 2 in 10 women with incomplete primary education to 3 in 10 women who completed primary and 4 in 10 who have some secondary education.

3.8 Ownership of Mosquito Nets

One of the strongest weapons in the fight against malaria is the use of mosquito nets while sleeping, especially ones that have been treated with insect-icide. Since the UHSBS was essentially focused on issues related to HIV/AIDS, detailed questions about mosquito nets were not included. However, the Household Questionnaire included questions on whether the household had any mosquito nets and if so, how many.

Table 11
Mosquito net coverage, Uganda 2004-05

Residence/ region	Percentage of households with:		Mean number of nets per household	Number of households
	At least one mosquito net	More than one mosquito net		
Residence				
Urban	59.9	33.7	1.2	1,302
Rural	20.4	8.7	0.4	8,227
Region				
Central	24.5	13.3	0.5	1,790
Kampala	67.0	37.1	1.4	575
East Central	23.4	9.4	0.4	1,395
Eastern	18.8	6.1	0.3	995
Northeast	39.8	21.5	0.8	729
North Central	27.2	12.3	0.5	955
West Nile	29.4	16.7	0.6	680
Western	18.1	6.3	0.3	1,132
Southwest	13.0	3.9	0.2	1,277
Total	25.8	12.1	0.5	9,529

One in four households has at least one mosquito net and 12 percent own more than one net (Table 11). The mean number of nets per household is 0.5.

Ownership of mosquito nets is considerably higher in urban areas than in rural areas. Similarly, net ownership is by far the highest in Kampala (67 percent of households), followed by Northeast region (40 percent). Households in the mountainous and less malaria-prone areas like the Southwest (13 percent), Western (18 percent) and Eastern regions (19 percent) are less likely to own a mosquito net.

Mosquito net coverage has increased considerably. The proportion of households that have at least one mosquito net has doubled from 13 percent in 2000-01 to 26 percent in 2004-05.

4 RESULTS OF HIV TESTING

As mentioned in the introduction, the 2004-05 UHSBS included HIV testing. All women and men who were eligible for individual interview were asked if they would consent to give a blood sample (see Introduction for description of the testing). Initial findings related to the HIV test results for adults are presented below. A more detailed analysis of the results will be included in the final report, along with HIV prevalence data for children under five and results for syphilis and herpes testing.

Accurate estimation of HIV prevalence is necessary to assess the magnitude of the AIDS epidemic in Uganda and track trends over time. As in most of sub-Saharan Africa, national HIV prevalence estimates for Uganda have been derived primarily from sentinel surveillance in pregnant women. Currently, the sentinel surveillance system consists of 25 sentinel sites in government and mission health facilities selected to represent the different regions and rural and urban populations in the country. Annually, pregnant women registering their first visit over a period of 10-12 weeks to the antenatal care clinic (ANC) at the selected sentinel site are anonymously tested for HIV and the results analysed by the Ministry of Health.

The ANC surveillance approach was designed to monitor magnitude and trends in defined populations. As such, the data have a number of limitations when extended to project estimates to the general population, principally related to the fact that pregnant women are not representative of the general adult population as a whole. Most obvious in this regard is the fact that HIV prevalence levels typically differ between men and women, and men are not represented in the ANC data. Moreover, pregnant women are not representative of all women. HIV prevalence levels also vary with age, and women who attend antenatal care clinics have a different age distribution from the female population at large. Finally, the clinics selected for inclusion in the ANC surveillance may not draw from a representative pool of pregnant women; often the clinics have an urban bias in their clientele. Periodic population-based surveys will therefore help to calibrate the sentinel surveillance data and help to measure progress in achieving national targets for HIV prevalence.

4.1 HIV Testing Coverage Rates

Overall, 86 percent of eligible respondents in the UHSBS provided blood samples for HIV testing (Table 12). Women were more likely to give blood samples for testing than men (88 percent versus 83 percent).

The main reason for non-response for the HIV testing was not having been interviewed for whatever reason (8 percent of eligible respondents), followed by refusal to provide a blood sample (6 percent of eligible respondents). Not having been interviewed accounts for a larger share of non-response than refusal to be tested among men, whereas for women, refusal to be tested and not being interviewed contribute equally to non-response.

Table 12

Response rates for HIV testing, (unweighted) Uganda 2004-05

Percentage of respondents age 15-49 who:	Women	Men	Both sexes
Were tested	88.3	82.5	85.6
Refused testing	5.8	5.9	5.9
Were not tested for technical reason (no supplies, etc.)	0.7	0.7	0.7
Were not interviewed	5.1	10.9	7.8
Total	100.0	100.0	100.0
Number of eligible respondents	10,561	9,033	19,594

As shown in Appendix Table A, the percent tested for HIV is remarkably even across background characteristics, lending confidence to the HIV prevalence rates derived from the survey (see next section). The only exception is that urban residents and those who live in Kampala have lower rates of HIV testing than other respondents. There is also a slightly lower coverage among those with secondary education.

4.2 HIV Prevalence Rates

Table 13 presents the findings from the HIV testing. Seven percent of Ugandan adults aged 15-49 are infected with HIV.

HIV prevalence is higher for women than men; overall, 8 percent of women have HIV, compared to 6 percent of men. For both sexes, HIV infection levels are highest among those in their 30s and 40s and are the lowest in the 15-19 year age group—3 percent among women and 1 percent of men. Prevalence among women then rises steadily and peaks at 12 percent for women age 30-34. HIV infection among men peaks at a slightly higher age, 35-39; it is also lower than among women at all ages.

Ugandan adults living in urban areas are almost twice as likely to be infected with HIV as those in rural areas. Infection rates also vary in different regions of Uganda. The lowest infection rate is found in the West Nile (less than 3 percent), while the highest levels are in Kampala, Central and North Central regions (9 percent each). There is no consistent pattern of HIV infection by education level.

HIV prevalence derived from women participating in the 2002 round of the ANC sentinel surveillance is estimated at 6.2 percent. The 2005 estimates are due soon. The 2002 estimate is close to the prevalence of 7 percent among both sexes from the survey.

The 2004-05 UHSBS data confirm that Uganda has a severe, generalised HIV epidemic and provides useful information on the distribution of HIV in the population. Further analyses in the final report of the UHSBS will provide additional information on the links between behaviour, knowledge, and HIV infection in Uganda.

References

Uganda Bureau of Statistics (UBOS) and ORC Macro. 2001. *Uganda Demographic and Health Survey 2000-01*. Calverton, Maryland, USA: UBOS and ORC Macro.

Uganda Ministry of Health. 2004. *STD/HIV/AIDS Surveillance Report 2003*.

Table 13

Percentage of women and men age 15-49 who are HIV positive, Uganda 2004-05

Characteristic	Women	Men	Both sexes
Age			
15-19	3.2	1.2	2.2
20-24	7.3	3.4	5.8
25-29	9.1	6.8	8.2
30-34	12.0	9.1	10.7
35-39	10.4	9.6	10.0
40-44	9.7	9.2	9.5
45-49	10.0	8.3	9.2
Residence			
Urban	13.3	7.3	10.7
Rural	7.2	5.6	6.5
Region			
Central	11.0	7.4	9.4
Kampala	12.5	5.2	9.2
East Central	7.7	6.1	7.0
Eastern	6.5	5.1	5.8
Northeast	4.5	3.7	4.1
North Central	10.5	8.0	9.4
West Nile	3.1	2.0	2.6
Western	8.1	6.6	7.4
Southwest	8.2	5.8	7.1
Education			
No education	6.6	8.1	7.0
Primary incomplete	8.1	5.2	6.8
Primary complete	10.3	7.3	8.8
Secondary +	8.6	5.5	6.9
Total aged 15-49	8.1	5.8	7.1
Total aged 15-59	7.9	6.0	7.0

Appendix

Table A
Coverage of HIV testing among women and men age 15-49 (unweighted), Uganda 2004-05

Background characteristic	Women		Men		Both sexes	
	Percent tested	Number of women	Percent tested	Number of men	Percent tested	Number of individuals
Age						
15-19	85.5	2,356	80.0	2,354	82.8	4,710
20-24	86.2	2,076	79.5	1,456	83.4	3,532
25-29	88.8	1,913	80.6	1,385	85.4	3,298
30-34	90.3	1,520	83.7	1,361	87.2	2,881
35-39	88.7	1,133	84.7	1,017	86.8	2,150
40-44	90.1	898	87.0	863	88.6	1,761
45-49	91.1	665	86.4	597	88.9	1,262
Residence						
Urban	81.5	2,021	69.0	1,763	75.7	3,784
Rural	89.5	8,540	85.4	7,270	87.6	15,810
Region						
Central	88.6	972	82.6	915	85.7	1,887
Kampala	77.2	1,241	64.9	1,087	71.5	2,328
East Central	93.8	1,203	89.1	952	91.7	2,155
Eastern	88.3	950	84.8	899	86.6	1,849
Northeast	90.7	1,297	84.0	1,019	87.7	2,316
North Central	83.8	1,126	78.4	989	81.3	2,115
Northwest	90.1	1,560	86.1	1,275	88.3	2,835
Western	91.3	1,093	87.4	971	89.5	2,064
Southwest	87.9	1,119	83.6	926	86.0	2,045
Education						
No education	89.1	2,623	79.9	815	86.9	3,438
Primary incomplete	89.5	4,721	85.1	4,010	87.4	8,731
Primary complete	89.6	1,092	82.7	1,284	85.9	2,376
Secondary +	82.5	2,125	78.7	2,924	80.3	5,049
Total 15-49	88.0	10,561	82.2	9,033	85.3	19,594
Total 15-59	88.1	11,454	82.8	9,905	85.6	21,359

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